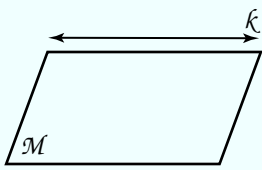
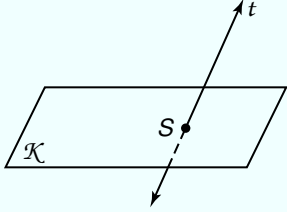
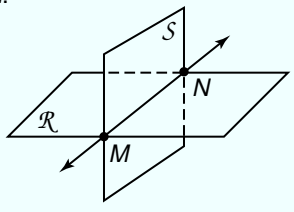


Study Guide

Student Edition
Pages 12–18**Points, Lines, and Planes**

Points, lines, and planes can be related in many different ways. Figures can be used to show these relationships. When two figures have one or more points in common, the figures are said to **intersect**. When points lie on the same line, the points are said to be **collinear**. When points lie in the same plane, the points are said to be **coplanar**.

Example: Draw and label a figure for each relationship.

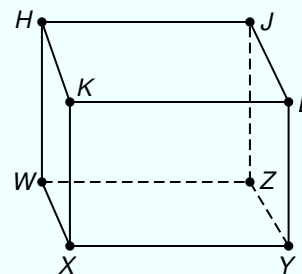
<p>Line k does not intersect plane M.</p> 	<p>Line t intersects plane K at point S.</p> 	<p>Planes R and S intersect in line MN.</p> 
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Draw and label a figure for each relationship.

- Lines JK and EF are not in plane M , but intersect plane M at X .
- Lines m and n intersect at point Q .
- Points R , S , and T are in plane M , but point W does not lie in plane M .
- The intersection of planes A , B , and C is line EF .

Refer to the figure at the right to answer each question.

- Are points H , J , K , and L coplanar?
- Name three lines that intersect at X .
- What points do plane $WXYZ$ and HW have in common?
- Are points W , X , and Y collinear?
- List the possibilities for naming a line contained in plane $WXXH$.



Practice

Student Edition
Pages 12–18**Points, Lines, and Planes****Draw and label a figure for each relationship.**

1. Lines ℓ , m and j intersect at P .
2. Plane \mathcal{N} contains line ℓ .

3. Points A , B , C , and D are noncollinear.
4. Points A , B , C , and D are noncoplanar.

Refer to the figure at the right to answer each question.

5. Are points H , M , I , and J coplanar?
6. How many planes are shown?
7. Name the intersection of planes ABG and CHG .
8. Name the intersection of plane ABC and \overleftrightarrow{HL} .
9. Which segments are contained in all three of the planes GFH , CDI , and EDI ?
10. **List the Possibilities** Tim can choose from a tan shirt, a blue shirt, and a green shirt. He can choose from black slacks or blue jeans. He can choose from a windbreaker, a sweatshirt, or a jacket. How many different outfits can he wear if he will not wear the sweatshirt with the black slacks?

